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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/932,677	08/16/2001	Donald F. Weaver	NCI-006DVI	5945
959	7590	03/11/2005	EXAMINER RAO, DEEPAK R	
LAHIVE & COCKFIELD, LLP. 28 STATE STREET BOSTON, MA 02109			ART UNIT 1624	PAPER NUMBER

DATE MAILED: 03/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/932,677

Applicant(s)

WEAVER ET AL.

Examiner

Deepak Rao

Art Unit

1624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 68, 138 and 142-186 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 68, 138, 142 and 145 is/are rejected.
- 7) ☒ Claim(s) 143-144, 146-186 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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### DETAILED ACTION

This office action is in response to the amendment filed on December 17, 2004.

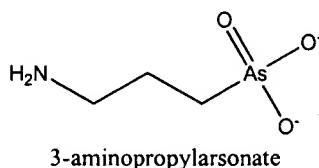
Claims 68, 138 and 142-186 are pending in this application.

***The following rejections are maintained:***

Claims 68, 138, 142 and 145 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abdul-Ghani et al., Brain Research (1996). The reasons provided in the previous office action are incorporated here by reference.

The remarks/arguments have been considered but they are deemed to be sufficient to overcome the rejection under 35 U.S.C. 103(a) because as explained in the previous office action, the reference teaches 3-aminopropylarsonate compound having anticonvulsant activity, see the reference document. The structural analogs of the compound would have been suggested to one of ordinary skill in the art. The instant claims are drawn to using compounds wherein the amino group and the anionic group are separated by a two carbon chain, as compared to the reference compound which has three carbon chain. Thus, the instant claims recite compounds that differ from the reference compound by a  $-\text{CH}_2-$  group and therefore, the instant claims include compound that are structural analogs or homologs of the reference compounds which would have been obvious to one having ordinary skill.

For example, the reference discloses 3-aminopropylarsonate (depicted below for convenience)



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and the instantly recited genus includes a compound having an two-carbon spacer unit, i.e., ethyl group (-CH<sub>2</sub>-CH<sub>2</sub>-) in place of the propyl group (-CH<sub>2</sub>-CH<sub>2</sub>-CH<sub>2</sub>-). Compounds differing regularly by the successive addition of the same chemical group, e.g., by -CH<sub>2</sub>- groups are generally of sufficiently close structural similarity that there is a presumed expectation that such compounds possess similar properties. *In re Wilder*, 563 F.2d 457, 195 USPQ 426 (CCPA 1977).

Applicant argues that 'it is unclear how the entire genus of the instant claims is a homolog of the limited number of prior art species'. The genus recited in the instant claims is 'a  $\beta$ -amino anionic compound comprising an amino group, an anionic group and a two-carbon spacer unit', which as explained above differs by a -CH<sub>2</sub>- group from the reference compound and therefore, the genus of the instant claims includes a structural analog of the reference compound.

Applicant cites MPEP § 2144.09 and argues that 'a genus structure which is not confined to adjacent homologs is not prima facie obvious in light of prior art species'. However, the MPEP section relied upon indicates that "prior art disclosure of C<sub>8</sub> to C<sub>12</sub> alkyl sulfates was not sufficient to render prima facie obvious claimed C<sub>1</sub> alkyl sulfate". Contrary to the explanation provided in the MPEP, the instant situation involves a claimed genus that includes an adjacent homolog of the reference disclosed compound (e.g., ethyl in place of propyl).

Applicant next reminds the examiner of the *Graham v. Deere Co.* requirements in establishing an obviousness rejection under 35 U.S.C. 103(a). The rejection was made fully taking into consideration of the above requirements as set forth in MPEP § 2144.08, which are further explained below:

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- (A) Determine the scope and content of the prior art: The reference teaches 3-aminopropylarsonate compound having anticonvulsant activity, see the disclosure in the reference.
- (B) Ascertain the differences between the prior art and the claims in issue: The genus recited in the instant claims includes compounds that are structural analogs of the reference compounds, e.g., includes a compound that differs from the reference compound by a  $-\text{CH}_2-$  group.
- (C) Determine the level of skill in the pertinent art: One of ordinary skill in the art would have had the reasonable expectation that such structurally analogous compounds would have similar properties and therefore, the same use.

In light of the above *Graham v. Deere* factors, the structural analogs of the reference compounds would have been obvious to one of ordinary skill in the art. One of ordinary skill in the art would have been motivated to prepare the structural analogs of the reference compounds with the reasonable expectation that such compounds would have anticonvulsant activity. Therefore, it has been held that the claimed method using compounds that are structurally analogous to the reference disclosed compounds is prima facie obvious, absent a showing of unexpected results.

It is to be noted that rejection under 35 U.S.C. 103 is proper where the subject matter claimed “is not *identically* disclosed or described” in the prior art, and the prior art directs those skilled in the art to the compounds, without any need for picking, choosing, and combining various disclosures. See *In re Shaumann et al.*, 572 F.2d 312, 315, 316, 197 USPQ 5, 8, (CCPA 1978). Further, the reference teaches that the compounds are useful as anticonvulsant agents, which is sufficient to one of ordinary skill to make the claimed compounds because similar

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properties are normally presumed when compounds are very close in structure. "The question under 35 U.S.C. 103 is not merely what the reference expressly teaches but what it would have suggested to one of ordinary skill in the art at the time the invention was made."

"Structural relationships provide the requisite motivation or suggestion to modify known compounds to obtain new compounds." See *In re Duel*, 51 F.3d at 1558, 34 USPQ2d at 1214. The closer the physical and chemical similarities between the claimed species or subgenus and any exemplary species or subgenus disclosed in the prior art, the greater the expectation that the claimed subject matter will function in an equivalent manner to the genus. See *In re Dillon*, 919 F.2d at 696, 16 USPQ2d at 1904. "An obviousness rejection based on similarity in chemical structure and function entails the motivation of one skilled in the art to make a claimed compound, in the expectation that compounds similar in structure will have similar properties." *In re Payne*, 606 F.2d 303, 313, 203 USPQ 245, 254 (CCPA 1979). Reference must be considered under 35 U.S.C. 103, not only for what it expressly teaches but also for what it fairly suggests, in determining obviousness. *In re Burckel*, 201 USPQ 67 (CCPA 1979).

For all the above reasons, the rejection for claims 68, 138, 142 and 145 under 35 U.S.C. 103(a) of the previous office action is hereby maintained.

#### ***Allowable Subject Matter***

Claims 143-144 and 146-186 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

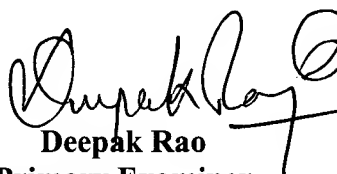
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deepak Rao whose telephone number is (571) 272-0672. The examiner can normally be reached on Tuesday-Friday from 6:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Mukund Shah, can be reached on (571) 262-0674. If you are unable to reach Dr. Shah within a 24 hour period, please contact James O. Wilson, Acting-SPE of 1624 at (571) 272-0661. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1600.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
**Deepak Rao**  
**Primary Examiner**  
**Art Unit 1624**

March 8, 2005